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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/606,939	06/30/2000	Takahiro Kimura	Q59907	8452

7590

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EXAMINER

FISCHER, JUSTIN R

ART UNIT

PAPER NUMBER

1733

DATE MAILED: 03/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-15

Office Action Summary

Application No.

09/606,939

Applicant(s)

KIMURA ET AL.

Examiner

Justin R Fischer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-7,9,10 and 13-18 is/are rejected.
- 7) ☒ Claim(s) 2,3,8,11 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. In light of the translation of Maeda (JP 01030808) submitted by applicant on January 30, 2003, the rejection of claims 1, 5-10, and 13-18 with Maeda has been withdrawn. Furthermore, the declaration submitted by applicant on January 30, 2003, along with the cancellation of claim 8, has been considered and found to properly attribute the subject matter to the common inventors of this application and US 6,491,079 (US Serial # 09/756,879). As such, there are no applicable rejections under 35 U.S.C 102 (e), 102(f), and 102(g).

Claim Rejections - 35 USC § 112

2. Claims 17 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 17, as currently drafted, the language "among the steel cord reinforcing layers" appears in line 2. This language suggests that there is more than one steel cord reinforcing layer; however, independent claim 1 defines "at least one steel cord reinforcing layer". It is suggested that claim 17 be amended to read -- among the at least one steel cord reinforcing layer --.

With respect to claim 18, the language "the reinforcing layer is continuous" appears in lines 1 and 2. It is suggested that applicant amend the claim as follows to be consistent with claim 17, from which it depends from: wherein the at least one reinforcing layer located inside in the widthwise direction of the tire".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Powell (GB 1,000,113, newly cited). As best depicted in Figure 1, Powell is directed to a pneumatic tire construction having a tread portion, a pair of sidewalls, a pair of bead portions, a carcass 4 toroidally extending between said bead portions, and a steel cord reinforcing layer 8 (Page 2, Lines 37-46), wherein (a) said carcass is formed of steel reinforcing elements (Page 1, Lines 75-85) and (b) said carcass has a turnup portion that is wound around the respective beads from an inside to an outside, such that the terminal end of said turnup portion is located at an outer peripheral position of said beads in the vicinity of the main portion of said carcass.

With respect to claims 13-16, Figure 1 of Powell clearly depicts the terminal end of the steel cord reinforcing layer in relation to the carcass ply and bead core in accordance to the limitations of the claimed invention.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Powell in view of Miyoshi (JP 52-75702, newly cited). As set forth in the previous paragraph, Powell is directed to a pneumatic tire construction comprising a carcass formed of steel reinforcing elements and a steel cord reinforcing layer. However, Powell is completely silent with respect to the size and spacing of the steel reinforcing elements in the steel cord reinforcing layer and thus necessarily fails^{to} expressly suggest a cord diameter or cord spacing between 1.00 and 1.50 millimeters. In any event, it is readily appreciated in the tire industry that the diameter and spacing of reinforcing elements is dependent on the type of tire, the intended use of the tire, and the additional tire structure (material and number of carcass plies, reinforcing plies, belt plies...). As such, it would have been within the purview of one of ordinary skill in the art at the time of the invention to appropriately select a steel cord diameter and spacing depending on the aforementioned characteristics, it being further noted that steel cords having the claimed diameters are commonly employed in larger sized tires. Additionally, while the claim contains a limitation that intends to require a flaring at the cord end, the claim does not exclude there being no flare since the diameter at the end is between 1.0 and 1.5 times the general cord diameter. Miyoshi is further provided to evidence that it is well known in the tire industry to flare the ends of reinforcing elements in order to eliminate strain and ultimately improve the durability of a given tire. In this instance, Miyoshi suggests a flared region that is between 1.1 and 2.5 times the general cord diameter, which includes nearly every value of the claimed invention, there being no

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evidence of "unexpected results" in the original disclosure to provide a criticality for a flared range between 1.0 and 1.5.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Powell in view of the Admitted Prior Art (Amendment A filed May 29, 2002). Powell is directed to a pneumatic tire construction having a tread portion, a pair of sidewalls, a pair of bead portions, a carcass 4 toroidally extending between said bead portions, and a steel cord reinforcing layer 8 (Page 2, Lines 37-46), wherein (a) said carcass is formed of steel reinforcing elements (Page 1, Lines 75-85) and (b) said carcass has a turnup portion that is wound around the respective beads from an inside to an outside, such that the terminal end of said turnup portion is located at an outer peripheral position of said beads in the vicinity of the main portion of said carcass. While Powell fails to expressly describe the twisting structure of the steel reinforcing elements in the cord reinforcing layer 8, the use of both S and Z twisting assemblies is extremely well known in the cord industry and particularly in the tire industry, as shown for example by the Admitted Prior Art (Page 7, 1st Paragraph). In this instance, applicant states that the "Z-lay outer sheath structure" is a conventional twisting structure that is known in the art as evidenced by selected portions of two pieces of literature. As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the reinforcing elements in the steel cord reinforcing layer of Powell as a "Z-lay outer sheath structure", there being no evidence of any unexpected results to establish a criticality for such a twisting structure.

8. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Powell in view of Ochiai (US 5,029,627, of record). Powell is applied in the same

manner as set forth in Paragraphs 4 and 6 above. While Powell fails to include at least one organic fiber chafer, such tire components are extensively used in bead portions to eliminate the buildup of stresses and optimize the bead reinforcement. For example, Ochiai is similarly directed to a pneumatic, radial ply tire having a steel carcass structure and at least one steel bead reinforcing layer. Ochiai further suggests the use of an organic cord layer (organic fiber chafer) that that is disposed axially outward of the carcass turnup portion, as required by the claimed invention. One of ordinary skill in the art at the time of the invention would have found it obvious to include additional bead reinforcing layers in the tire of Powell since the necessary degree of reinforcement is dependent on the specific type of tire and the intended use of the tire. In particular, it is recognized in the tire industry that increased reinforcement in the bead region is commonly associated with heavy duty and other large sized tires.

Regarding claim 10, although Ochiai does not specifically define the inclination angle of the organic fiber cords, the broad range of the claimed invention defines a conventional bead reinforcing ply structure. It is noted that Ochiai suggests an angle between 20 and 70 degrees ^{for} to the reinforcing elements in the bead reinforcing layer, such that one of ordinary skill in the art at the time of the invention would have expected the reinforcing elements in the organic fiber cord layer to have a similar inclination.

Allowable Subject Matter

9. Claims 2, 3, 8, 11, and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The reasons for indicating

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allowable subject matter have been previously set forth in Paper Number 10, Paragraph 9.

10. Claims 17 and 18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Justin Fischer

February 25, 2003


Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700